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## THE NORWICH TESTS, 1862-1909

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In spite of the conclusive evidence of the well-known "Springfield tests"<sup>1</sup> of four years ago, one still hears not infrequently a lament that "the good old days" are gone. It may not be amiss, therefore, for me to submit to the readers of the *School Review* a brief account of another series of tests recently given in a Connecticut community, covering a period about fifteen years later than that covered by the Massachusetts inquiry.

In 1906, shortly after the preliminary report of the Springfield tests, we decided to try some of our old examination papers on present-day pupils of Norwich, Conn. An arithmetic paper of 1856 was set before an eighth-grade division of the Broadway Grammar School of this city. Since we had the original papers of fifty years ago, we were able to make an exact comparison of results. The eighth-grade pupils of 1906 had still more than a year's work in grammar school before taking our regular entrance examinations.

The results were as follows:

	1856	1906
Pupils examined .....	73	27
Members attaining 100 per cent....	3	4
Lowest mark .....	40 per cent	70 per cent
Average mark .....	75 per cent	88 per cent
Average age .....	15¼	13½

In other words, the pupils of 1906 though two years younger than the pupils of 1856 did much better work on the very examination for which the pupils of 1856 had been prepared. A result so surprising led us to doubt our own tests. It was thought that possibly the division of pupils of 1906 was a picked division,

<sup>1</sup> See *The Springfield Tests*, issued by the Holden Book Cover Co., Springfield, Mass.

or that possibly the school did not represent the average of our grammar schools; for, still retaining the antiquated system of district management, we have no such uniformity of grammar-school work as is found in many communities. We resolved accordingly to make another test that should better represent our whole community and our average pupils.

We sent out to three of our largest districts papers in arithmetic, geography, history, and grammar, given as entrance examinations in 1862 and 1863.

These examinations were given in February, 1909, without previous warning or preparation, and under supervision of school principals, who, in making their returns, were ignorant of the results of 1862-63, and likewise of each other's results. It was declared by each principal independently that his own pupils would have done much better if the tests had been taken later in the year, after reviews had been completed.

The papers given were as follows:

#### ARITHMETIC

1. A man bought a house for \$4,000, and paid \$250 for repairs, and sold it so as to gain  $10\frac{1}{2}$  per cent on his investment. For how much did he sell it?
2. How much is  $\frac{3}{4} \times \frac{2}{3} \times \frac{1}{5}$  divided by  $\frac{2}{3} \times \frac{8}{11} \times \frac{5}{8}$ ?
3. Required, the simple interest on \$90.36 for 3 years 6 months 12 days, at 6 per cent.
4. If six yards of cloth cost £4 13s. what will 11 yards cost?
5. Find the amount of \$304.56 for four years, at 7 per cent, simple interest.
6. Subtract  $3 \times 4\frac{7}{8}$  from  $9 \times 5\frac{3}{4}$ .
7. What is the sum of  $5\frac{1}{2}$ ,  $6\frac{2}{3}$ , and  $7\frac{1}{4}$  in decimal numbers?
8. Reduce 0.425 to a vulgar fraction in lowest terms.
9. How many yards of carpeting  $\frac{3}{4}$  yard wide will cover a floor 27 feet long and 16 feet wide?
10. A load of hay weighs 2,625 lbs. What is it worth at \$15 per ton?

#### GEOGRAPHY

1. Where is Chicago situated? Cairo? Memphis? Pensacola? Richmond?
2. Where is Pike's Peak?
3. On what waters would you sail from Norwich to Baltimore?
4. What separates the Red Sea from the Mediterranean?

5. What is the length of a degree of longitude?
6. What are the principal ports of the United States, South of Norfolk, Virginia?
7. Name the principal mountain ranges of Europe.
8. Draw a map of Virginia.
9. Through what states does the Connecticut River flow?
10. When it is noon at Norwich what time is it 15° east of this place?

### HISTORY

1. What were the motives which induced the colonists of Virginia and of New England to form settlements in America?
2. What did Penn make the basis of his institutions?
3. What was the cause of the Revolutionary War?
4. What foreign assistance had the Americans during the Revolution?
5. When was the battle of Bunker Hill fought?
6. When was the Constitution adopted?
7. For what reasons was war declared by the United States against Great Britain in 1812?
8. In whose administration was Louisiana annexed to the United States, and from whom purchased?
9. What was the Missouri Compromise?
10. Which of the states is called the Old Dominion?

### GRAMMAR

1. Give the principal parts of the verb *to love*, and write out the inflection of the tenses of the indicative mode.
2. Decline *John*, *James*, and *men*.
3. Write a sentence concerning General Lyon, which shall contain a relative clause.
4. Is the following sentence correct? If not, make it so: "I done the best I could."
5. "I intended to have been there." Is this sentence correct? If not, make it so.
6. In the following stanza parse the words in italics:  
     The *muse*, disgusted at an age, *and* clime  
     *Barren* of every glorious theme,  
     In distant lands now waits a better time,  
     *Producing* subjects worthy fame.
7. Analyze the stanza.
8. Compare *good*, *bad*, *little*, and *strong*.
9. Give the principal parts of *go*, *strike*, *run*, *rise*, and *sit*.
10. Name and define the tenses.

It will be noted that in the fourth question of the arithmetic paper the table of English money is involved. Since we no

longer require this in our entrance tests it is not usually taught in our grammar schools. Again in the eighth question the term "vulgar" fraction is used, a term superseded by "common" fraction in most of our textbooks. In history likewise the tenth question involves a term no longer taught in our schools. In one of the schools a substitute question was given instead of the fourth, and the word "common" instead of "vulgar." No suggestion was made, however, as to the tenth question in history. In the other two schools no comment whatever was made on any of the questions, and many pupils registered a flat failure on questions that they would have answered if worded in today's terms.

The results of the tests may be tabulated as follows:

School	I	II	III	Total 1909	Total 1862-63
Number.....	31	25	35	91	88
Age.....	14	14	14	14	15
Arithmetic.....	95%	90%	85%	90%	54%
Geography.....	85%	80%	70%	78%	66%
History.....	77%	82%	71%	76%	57%
Grammar.....	85%	74%	75%	78%	63%
Combined Average....				80%	60%

I cannot say that the results were at all surprising in view of the previous tests of 1906. But that the average pupil of Norwich grammar schools today, at the age of fourteen, is better fitted in all subjects than was the average pupil of fifteen forty odd years ago, shows most clearly that modern fads have not brought with them a loss of the much-praised disciplinary studies of former times.

Even without the formal tests, a comparison of the old examinations with those set today for entrance to our school is sufficient to show the greater advancement of modern pupils. I do not submit for this brief sketch any samples of our present papers, but have taken pains to collect such samples from a number of the best high schools of New England. In every case the examinations of today are more difficult than those of forty or fifty years ago.

But someone may ask—as Cicero has it—"Did not the teach-

ers of an earlier day, even if they were not so well trained or so skilful as those of today, did they not, after all, succeed in giving the pupil a stimulus to effort, a spirit of ambition, that modern teachers fail to give? See the great men that have come from those schools."

The reply must be that only time can tell what sort of men will come from the schools of today. Doubtless it has always been true, and always will be true, that men of great natural ability and energy will rise to prominence, whether schools be good or bad. The only pertinent question is whether the greatness of our leaders of today can be traced to the excellence of their grammar-school training. Have we any evidence that their teachers roused them to power of thought?

A survey of the entrance records of those alumni of this school who have shown great intellectual power fails to suggest any such power at the end of their grammar-school training. A few, out of many, examples must suffice for illustration.

One of the greatest oriental scholars of this country was able to secure only 65 in geography and 62 in grammar on such examinations as are printed above.

Another alumnus, who stood among the very leaders of his college class and has risen to a position of prominence in many public affairs, secured marks of 55 in grammar, 60 in arithmetic, and 65 in geography.

A professor of history in one of our greatest universities was marked 39 in grammar, and 60 in arithmetic, though he showed even then his natural bent for history by getting a mark of 90.

A well-known editor received 62 in grammar.

A prominent judge secured 60 in history.

But further examples are needless to show that the grammar schools of their day did not rouse such men to intellectual achievements.

Another lesson is easily learned from the perusal of old records—it is unsafe to estimate a child's mental capacity by the casual blunders he may make, even if they seem to us colossal. To conclude that because a boy cannot locate the Nile River he is therefore entirely ignorant of geography is as unsafe as it is

common today in the writings of critics of our schools. To infer that because a boy makes some stupid blunders in judgment in his examinations he is therefore unable to reason at all, is equally unwise.

What can be said of the intelligence of a boy who could make the following answers in history?

1. When was the battle of Bunker Hill fought? *Ans.*: 1492.
2. When was the Constitution adopted? *Ans.*: The same year.
3. For what reasons was war declared by the United States against Great Britain in 1812? *Ans.*: Admission of Texas into the United States.

Yet in other studies, and in general intelligence, this boy seemed to be above the average of his class.

Answers as senseless as these were submitted by another boy who was one of a very few to secure 100 per cent in arithmetic.

Here is a question in arithmetic:

Complete the proportion  $5 : \text{---} :: 6 : 66$  and give the rule for proportion.

*Ans.*

$$5 : 6 :: 66$$

6

$$\begin{array}{r} 5 \overline{) 396} (79\frac{1}{2} \end{array} \quad \text{Ans.}$$

35

46

45

1

RULE.—State your question and make the number that is like the required fourth term or answer the third term of the proportion. Of the other two—if the answer is to be larger than the third term—make the less number the first term and the larger the second. If not, make the larger the first term and the smaller the second. Multiply the second and third terms together and divide by the first. The quotient will be the required fourth term or answer.

Is it any wonder that the boy failed to get a correct answer? One suspects that much so-called disciplinary study was of this same wooden and mechanical sort. Those were the days when pupils memorized geometry propositions by number, recited history verbatim, and memorized in Latin grammar exceptions that they would never meet in their reading of Latin.

The only argument in defense of the older grammar-school training that seems sound may be stated somewhat as follows:

All effort that ends in success has a strengthening effect on character. The grammar schools of bygone days made learning difficult. Therefore they built up character.

For the few boys or girls who won the fight, surmounted the difficulties of poor instruction, and worked out their own salvation, undoubtedly the process was a strengthening one. But for the mass of pupils the process was not worthy of comparison with that of our modern schools.

On the whole the tests show us, not that we are perfect, for our imperfections are glaring and discouraging, but that we must look for aid to the best educational thought of the present and future in our own land and abroad, rather than to a past system on which we have made many improvements.